

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A method of construction, comprising the steps of:
forming a volume of loose granular material in a base soil;
injecting a polymeric resin into the volume of loose granular material; and
allowing the polymeric resin to cure and form a structural support within the base soil.
2. The method of claim 1 in which forming a volume of loose granular material comprises:
forming a hole in the base soil; and
placing loose granular material in the hole.
3. The method of claim 2 in which injecting a polymeric resin into the volume of loose granular material comprises:
inserting a probe into the hole and injecting polymeric resin into the bottom of the hole using the probe.
4. The method of claim 3 in which injecting polymeric resin into the hole comprises removing the probe from the hole while injecting polymeric resin.
5. The method of claim 1 in which forming a volume of loose granular material comprises:
agitating a granular base soil.
6. The method of claim 5 in which injecting a polymeric resin into the volume of loose granular material comprises:
inserting a probe into the volume of agitated granular base soil and injecting polymeric resin through the probe.

7. The method of claim 6 in which injecting polymeric resin into the hole comprises removing the prove from the volume of agitated granular base soil while injecting polymeric resin.
9. The method of claim 1 in which the base soil is a permafrost soil.
10. The method of claim 1 in which the polymeric resin expands upon curing.
11. The method of claim 1 in which the granular material comprises one or more of silt, sand, gravel, rock fragments or construction rubble.
12. The method of claim 1 in which the granular material comprises a synthetic material.
13. The method of claims 1 in which the polymeric resin is a two part hydro -insensitive expanding polymeric resin.
14. A construction pile formed by the method of claim 1.
15. A construction barrier formed by application of the method of claim 1 at plural locations adjacent to each other in a base soil.
16. A method of construction, comprising the steps of: excavating to predetermined depth a hole by drilling or other conventional excavation techniques; and placing an injection probe or probes into the excavation; and back-filling the excavation with pre-determined sized crushed rock or gravel; and injecting the back-filled material with a polymeric resin, whereby upon curing , the polymeric resin and granular material forms a structural friction pile.
17. The method of claim 16 in which the friction pile supports a foundation be it pile and beam construction or concrete slab-on-grade.

18. The method of claim 16 in which vertical support structures are constructed in permafrost or ice lenses.

19. The method of claim 16 in which the polymeric resin is a two part hydro-insensitive expanding polymeric resin.

20. A method of construction, comprising the steps of agitating a base soil; placing an injection probe or probes into the agitated base soil; and injecting the agitated soils with a polymeric resin, whereby upon curing, the polymeric resin and agitated granular material forms a structural friction pile.

21. The method of claim 20 in which the expanding polymeric resin is a closed cell, hydro-insensitive two part polymer resin injected into the agitated base soils.

22. The method of claim 20 in which agitating the base soils is accomplished by mechanical-vibratory drilling and/or hydraulic means and/or pneumatic means and/or sound waves and/or any other means that may now or later be developed which will agitate and break up base soils.

23. The method of claim 16 repeated to form a pre-determined and patterned array of friction piles that forms a structural barrier similar to sheet piles.